lanufacturers of Cars Attain Partial Standardization and More Co-operation.

Electric vehicle manufacturers, have been working toward and have to great extent attained partial standardisation of electric motor cars, following to some degree in the footsteps of the builders of gasolene cars.

There has been marked progress made by electric builders, and 1915 points toward greater production by some 20 per cent, more co-operation between maker, dealer, and user, lower prices and a general betterment of the cars themselves, with nothing radical in con-

In the main, the 1915 electric passer

In the main, the 1915 electric passenger cars are quieter, due to the greater use of worm drive, they are roomier because of the tendency to larger bodies, they are cheaper on the average because of the introduction of new low-priced vehicles, and they are finer in appearance because of the general tendency to streamlining the bodies, the influencing factor coming from the gasolene car.

While the progress in design has not been by any means radical the builders of electric cars have endeavored to do more for the dealer and the owner by a system of co-operation attained by orsanization. The Electric Automobile Manufacturers' Association, while it has been in existence for many years, never has been so active as it is at present, in securing among makers and dealers better co-operation and in preaching better selling methods. This association has done much good work in the field in helping the dealers become more familiar with ideal selling methods, thereby ultimately gaining what all seek, a minimum of loss through sales and service.

While this organization has been very

and service.

While this organization has been very active the local electric vehicle associations have shown their extreme willingness to bring the electric vehicle industry to a still higher standard and most of these associations have kept the car owner in mind as much as they have their own interests, since the car owner's welfare means much to the dealer, garageman, and all connected with the garageman, and all connected with the

of the Electric Vehicle Association of the er's welfare means much to the dealer, garageman, and all connected with the industry.

The makers in the field during 1914 have turned out approximately 5,000 cars, and if present plans are adhered to the coming year will see an increase of 1,000 vehicles over the 1914 figure. With this number on the list the average per company will be about 300 cars.

The list of manufacturers of electric vehicle makers, while it changes from year to year, shows a total in the neighborhood of twenty, each season seeing the coming in of new concerns and the passing of older ones. The past five years has witnessed production by thirty-five makers, yet each year there there was a falling off of old and a proportionate addition by new makers, until now about twenty remain.

Aside from the progress in the business side of the industry, advancement has been made in engineering lines and the greater use of the worm drive probably comes in first place. There has been an increase of over 50 per cent in the number of cars using this type of drive. For the first time spiral-bevel have been adopted because of their quiet operation as compared with the straight bevel and quietness in inclosed electric cars is an asset. The use of syntal bevel gears probably has been caused by the use of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars. Second in importance to the method of this type in gasolene passenger cars.

use of square-section wire on the arma-ture and ribbon for the fields is in greater use than ever before. This con-struction allows of more copper being used and hence a more powerful motor, without increasing the overall dimen-sions. These changes have helped to make the electric more efficient in hill

ELECTRICS IMPROVED | LEADERS IN THE ELECTRIC VEHICLE FIELD



BODY HERE GROWING

Section Organized Less Than Year Ago, But Aiready Has Grown Much.

By HARRY WARD.

One of the newest business organisa tions here is the Washington section of the Electric Vehicle Association of America. It was organized March 12, 1914, in the offices of the Fotomac Elec-

drive comes springing and for the first time electric vehicle makers have considered the cantilever seriously, a summary showing that four makers are using this type. These are the Baker and Buffalo, which use cantilevers in the rear only, and the newcomers, Milburn and Columbian, which use cantilevers both front and rear. Semielliptic front and three-quarter elliptic rear is the usual construction, although practically every type, such as elliptic and platform rear, are to be seen. One rather ususual method of springing has been incorporated in the Woods cars. In this the springs rest not upon the axies, but upon radius rods and instead of fastening the springs outside the frame they are attached inside the channel.

Electric motor develoament for these vehicles has tended toward greater capacity to care for overloading and the use of square-section wire on the armature and ribbon for the fields is in the tube from sticking and eliminate frictional blowouts.

Buys a Cadillac. The Cook & Stoddard Co. reports the sale of an eight-cylinder, seven pas-eenger Cadillac touring car to A. M. Fishel.

Edison Expert Here On Government Work

Dr. M. R. Hutchinson, Thomas A. Edison's chief engineer and personal representative, has been making weekly trips to Washington, for the past eighteen months, as he is directly in charge of all the Government storage battery business of the Edison Storage Battery Company.

Because of the rapidly increasing storage battery business in and around lise foot, but exerted such an amount age battery business in and around lise foot, but exerted such an amount lever control.

A weird "remedy" for a cold engine. The seating arrangement is unique in that the front seats are constructed to fold back into recesses in the front of the body, making the car a commodious two-passenger type at will. The new Baker has a graceful exterior due to the lowering of the body and the long wheelbase. The curves are full aluminum and sashless windows are used throughout. The door windows are operated by mechanical means with lever control.

of the Edison Storage Battery Company, has placed the service station in
charge of one of their most competent

the ears of the "home folks." And Graphite the Rims pointed E. W. Mollohan local manager. Kentucky Tests Operators. inspectors. A. S. Major, and has appointed E. W. Mollohan local manager.

The wonderful strides made by the Edison storage battery is a source of much gratification to Mr. Edison, and is justifying his belief that the American public is perfectly willing to pay a higher initial cost for a battery that will give constant, satisfactory service, at an exceedingly low upkeep cost, and which is guaranteed to show full rated capacity at all times during and at the end of four years og constant service.

Harry DeGroat Here.

Harry DeGroat, manager of the Studebaker branch in Philadelphia, was in Washington yesterday visiting Col. W. C. Long, of the Commercial Automobile and Supply Company.

Doering a Visitor.

H. H. Doering, manager of the Rauch & Lang branch in Philadelphia was in Washington this week visiting J. J. Bartram, the Rauch & Lang agent here.

Weird "Remedy" Found In War for Cold Engine

age battery business in and around of "back pressure" as to heat up the Washington, Dr. Hutchinson has taken over the District of Columbia business tion "getting her excited"—which ex-

Company, which handles the Baker elec-Company, which handles the Baker electric and Cadillac gasolene car. For 1915

Steering continues to be by a horithe company is showing the full Baker zontal lever mounted parallel with the the company is showing the full Baker line, which consists of four chassis with the leader, a four-passenger coupe, which has either wheel or lever steering. The main feature of this coupe, it is stated, is that it is of lighter construction as compared with many electrics of the coupe form. This lightness of weight is said to have been brought about by a simpler chassis construction, though strength has not been sacrificed. Cantilever rear springs and semi-elliptic fronts support the pressed-steel frame, which has a kick-up at the rear provided. frame, which has a kick-up at the rear give clearance over the rear axle.

Washington Firm Receives Con-

signment of Motors With

Altoona Cyclists Hold **Motorbob Contests**

Altoona, Pa.-motorbot contests.

FINDS READY FIELD

Emerson & Orme, Local Agents For Car, Rank Among Foremost Dealers.

Featuring the Detroit electric the firm of Emerson & Orme is meeting with much success in the sale of cars. The firm was organized some years ago, and is numbered among the most succ in the electric field.

The 1915 Detroit electric offering is six-body types, four of which are broughams and one a cabriolet mounted on a chassis of 100 inches wheelbase, and the sixth, a small brougham, is fitted to a chassis with 94-inch wheelbase. All of the models on the longer wheelbase have worm drive with the worm underneath the wheel, and their batteries are slightly larger than that of the shorter model which is fitted with a helical bevel gear rear axle. Battery capacity has been enlarged by

increasing the plates from thirteen to fifteen. The number of cells has not been altered. The 100-inch wheelbase cars have forty-two cells and the 94inch car forty cells.

A feature of importance is the metal compartment ahead of the motor and accessible to a trap door in the floor in which is mounted the controller mechanism brake, Klaxet horn, ammeter shunt and throw-over switch. The horn Many improvements.

Many improvements.

One of Washington's*pioneer automobile concerns is the Cook & Stoddard Company, which handles the Baker election the coal signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch. The horn replaces a bell signal, and the throwover switch is used to change the light ing connections from one half of the battery to the other. For additional protection the controller has an extra cover to the controller has an extra cove

rovided.
In the duplex control models the inter-There are two sets of internal expanding brakes on the rear wheels, operated independently by two pedals. An automatic circuit breaker cuts off the current when the emergency brake is applied.

In the duplex control models the interlocking cutout feature also prevents starting the car from either driving position unless the pedals are in position unless the pedals are in position unless the reare two sets of steering and control levers and two sets of steering and control levers and two sets of prevents. Optional tire equipment makes pos-sible the use of either cushion tires of 31 by 4 or special electric pneumatics, 32 by 4. plished by pushing forward the small ever at the side of the front masthead. which releases the brake pedals so that they can be gushed with the foot flush to the toeboards. This automatically relocks the pedals which have been ushed down and raises the other set of pushed down and raises the other set of pedals to the operating position. The motor is series-wound, and is said to have high torque and low internal resistance. It is held on the under side

of the supporting rails by large steel bolts, and may be readily lowered to

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